In the Claims

Please cancel claims 2, 4, 6, 8, 10, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 41, 42, 44, 45, 47, 49, 51 and 59-66 without prejudice or disclaimer.

Please add the following new claims:

-- 67. A method of making an artificial mammalian chromosome comprising introducing into a mammalian cell centromeric, telomeric and genomic DNA fragments; wherein the centromeric and telomeric DNA fragments provide centromere and telomere functions, respectively.

B6 68. The method of claim 67, wherein said centromeric, telomeric, and genomic DNA fragments are ligated to each other prior to introducing them into said cell.

69. The method of claim 67, wherein said centromeric, telomeric, and genomic DNA fragments are not ligated to each other prior to introducing them into said cell.

70. The method of claim 67, wherein said genomic DNA fragment contains an origin of replication.

71. The method of claim 67, wherein said genomic DNA fragment contains one or more genes of interest.

72. The method of claim 67, wherein said centromeric DNA comprises a DNA sequence that associates with CENP-E during mitosis.

73. An artificial mammalian chromosome obtained from the method of claim 67.

74. The artificial mammalian chromosome of claim 73, wherein said genomic DNA fragment is from a different source from that of said centromeric and said telomeric DNA.

75. The artificial mammalian chromosome of claim 73, wherein said centromeric DNA comprises a DNA sequence that associates with CENP-E during mitosis.

76. A vector comprising the artificial mammalian chromosome of claim 73.

77. A cultured mammalian cell comprising the artificial mammalian chromosome of claim 73.

78. A method of expressing a gene of interest in a mammalian cell, said method comprising propagating a mammalian cell containing the artificial mammalian chromosome of claim 73, wherein said artificial mammalian chromosome contains the gene of interest or contains a nucleic acid sequence that allows expression of said gene of interest, and wherein said gene of interest is expressed in said cell.

79. An artificial mammalian chromosome comprising:

(a) centromeric DNA, wherein said centromeric DNA comprises alpha satellite DNA or sequences functionally equivalent to said alpha satellite DNA;

(b) telomeric DNA; and

(c) genomic DNA, wherein said genomic DNA is a sub-genomic DNA fragment selected from the group consisting of restriction enzyme digestion fragments and mechanically sheared fragments.

80. The artificial mammalian chromosome of claim 79, wherein the genomic DNA fragment contains an origin of replication.

81. The artificial mammalian chromosome of claim 79, wherein the genomic DNA fragment contains one or more genes of interest.

82. The artificial mammalian chromosome of claim 79, wherein said centromeric DNA comprises a DNA sequence that associates with CENP-E during mitosis.

83. A vector comprising the artificial mammalian chromosome of claim 79.

84. A cultured mammalian cell comprising the artificial mammalian chromosome of claim 79.

85. A method of expressing a gene of interest in a mammalian cell, said method comprising propagating a mammalian cell containing the artificial mammalian chromosome of claim 79, wherein said artificial mammalian chromosome contains said gene of interest or contains a nucleic acid sequence that allows expression of said gene of interest, and wherein said gene of interest is expressed in said cell.

86. The artificial mammalian chromosome of claim 79, wherein said genomic DNA fragment is from a different source from that of said centromeric and said telomeric DNA.--